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NUNAVUT WATER BOARD
NUNAVUT IMALIRIYIN KATIMAYINGI
OFFICE DES EAUX DU NUNAVUT

File No.: **3BM-KIM1929**

May 27, 2019

John Stephen Mabberi - Mudonyi
Senior Administrative Officer
Hamlet of Kimmirut
P O Box 120, Kimmirut, NU
X0A 0N0
Email: saokim@qiniq.com

Bhabesh Roy, M.A.Sc., P.Eng.
Municipal Planning Engineer
GN-CG&S –Baffin Region
P. O. Box 379, Pond Inlet, NU
X0A 0S0
Email: broy@gov.nu.ca

RE: Replacement Water Licence No. 3BM-KIM1929

Dear Mr. Mabberi - Mudonyi and Mr. Roy:

Please find attached the replacement Water Licence No. **3BM-KIM1929** issued to the Hamlet of Kimmirut by the Nunavut Water Board (NWB) pursuant to its authority under Article 13 of the *Agreement between the Inuit of the Nunavut Settlement Area and Her Majesty the Queen in Right of Canada (Nunavut Agreement)*. The terms and conditions of the attached Licence related to Water use and Waste disposal are an integral part of this approval.

If the Licensee contemplates the renewal of this Licence, it is the responsibility of the Licensee to apply to the NWB for its renewal. The past performance of the Licensee, new documentation and information, and issues raised during a public hearing, if the NWB is required to hold one, will be used to determine the terms and conditions of the Licence renewal. Note that if the Licence expires before the NWB issues a new one, then water use and waste disposal must cease, or the Licensee may be in contravention of the *Nunavut Agreement* and the *Nunavut Waters and Nunavut Surface Rights Tribunal Act (NWNSTRA)*. However, the expiry or cancellation of a licence does not relieve the holder from any obligations imposed by the licence. The NWB recommends that an application for the renewal of this Licence be filed at least **three (3) months** prior to the Licence expiry date.

If the Licensee contemplates or requires an amendment to this licence, the NWB may decide, in the public's interest, to hold a public hearing. The Licensee should submit applications for amendment as soon as possible to give the NWB sufficient time to go through the amendment process. The process and timing may vary depending on the scope of the amendment; however, a minimum of **sixty (60) days** is required from time of acceptance by the NWB. It is the responsibility of the Licensee to ensure that all application materials have been received and are acknowledged by the Manager of Licensing.

The NWB strongly recommends that the Licensee consult the comments received by interested persons on issues identified. This information is attached for your consideration.¹

Sincerely,

Lootie Toomasie
Nunavut Water Board
Chair

LT/dd/ip

Enclosure: Licence No. **3BM-KIM1929**
Comments – CIRNAC, ECCC

Cc: Qikiqtani Distribution List

¹ Crown-Indigenous Relations and Northern Affairs Canada (CIRNAC), November 8, 2018.
Environment and Climate Change Canada (ECCC), October 25, 2018.

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DECISION

LICENCE NUMBER: 3BM-KIM1929

This is the decision of the Nunavut Water Board (NWB) with respect to an application dated May 30, 2016, for a renewal of a Water Licence made by:

HAMLET OF KIMMIRUT

to allow for the use of water and deposit of waste during municipal activities by the Hamlet of Kimmirut located within the Qikiqtani Region, Nunavut, generally located at the geographical coordinates as follows:

Latitude: 62° 50' 06" N Longitude: 69° 52' 04" W

DECISION

After having been satisfied that the application was for a location that falls outside of an area with an approved Land Use Plan and exempt from the requirement for screening by the Nunavut Impact Review Board (NIRB)¹, as described within Section 12.4.3 / Schedule 12-1 of the *Nunavut Agreement*, the NWB determined that the application could proceed through the regulatory process. In accordance with s. 55.1 of the *Nunavut Waters and Nunavut Surface Rights Tribunal Act* (NWNSRTA or *Act*) and Article 13 of the *Nunavut Agreement*, public notice of the application was given and interested persons were invited to make representations to the NWB.

After reviewing the submission of the Applicant and considering the representations made by interested persons, the NWB, having given due regard to the facts and circumstances, the merits of the submissions made to it and to the purpose, scope and intent of the *Nunavut Agreement* and of the *Act*, waived the requirement to hold a public hearing and determined that:

Licence No. 3BM-KIM0911 be replaced with the Licence No. 3BM-KIM1929 subject to the terms and conditions contained therein. (Motion #: 2019-B1-006)

Signed this 27th day of May 2019 at Gjoa Haven, NU.

Lootie Toomasie
Nunavut Water Board
Chair

LT/dd/ip

¹ Nunavut Planning Commission, Conformity Determination, February 16, 2016.

I. BACKGROUND

The Hamlet of Kimmirut is a small community located on the southern extent of Baffin Island, at 62° 50' 06" N and 69° 52' 04" W within the Qikiqtani region of Nunavut, and approximately 120 km south of Iqaluit. The community has a population of approximately 675 individuals, with the following relevant municipal infrastructure:

- A Water Supply Facility which draws water from the Fundo Lake and supplies distribution trucks;
- A Sewage Disposal Site 500 m south of the Hamlet, that consists of a dumping site that runs down a 300 m slope to the ocean, offering limited/no treatment;
- A Solid Waste Disposal Facility, which includes a bulky metals disposal area, a hazardous waste (waste oil, batteries and other materials) storage area.
- An Abandoned (2012) Sewage Disposal Facility (2 Lagoons) which was constructed in 2001 and upgraded in 2012, but never used and is now designated for abandonment and restoration; and
- An Abandoned (2001) Solid Waste Disposal Facility which was constructed in 2001 adjacent to the Abandoned (2012) Sewage Disposal Facility, but never used and now is designated for abandonment and restoration.

The Hamlet of Kimmirut has historically, and continues to discharge its sewage to a ditch 500 m south of the Hamlet which drains directly to the ocean. This practice is in contrast to Licence conditions and is one of the major issues identified during the Review of the Application. Similarly, the solid Waste facility currently in use is poorly maintained and nearing capacity, and the Hamlet is planning on developing a new site with updating management procedures.

There are two facilities that were constructed by the Hamlet but never used, and are in need of reclamation. In 2001 a new Sewage lagoon and a new solid Waste site, were constructed 1.5 km west of the community to improve the treatment of Sewage and provide new capacity for solid Waste disposal. In 2012, a second lagoon was added to this facility in order to further improve Sewage treatment and meet compliance discharge criteria. However, due to the presence of fish in the wetland downstream of these lagoons and the solid Waste site, these facilities have never been used and are designated for abandonment and restoration.

The Hamlet of Kimmirut has held Water Licences with the Board since 2002, as outlined in Table 1.

Table 1: Project Licensing History

Licence No.	Date Issued	Comment
NWB3KIM0207	September 1, 2002	Water use 30,000 m ³ <i>per year</i> and Waste disposal.
3BM-KIM0911	January 9, 2009	Water use 30,000 m ³ <i>per year</i> and Waste disposal.

II. PROCEDURAL HISTORY

On August 13, 2013, the Government of Nunavut, Community and Government Services (GN-CGS) on behalf of the Hamlet of Kimmirut originally applied for a replacement of their expired Water Licence 3BM-KIM0911. Following both internal and external review, on July 23, 2015, the NWB informed the Hamlet of Kimmirut that the information provided was deemed insufficient and that additional information would need to be provided in order to further process the application.

On May 31, 2016, an updated Application to renew the Licence was submitted to the Board by Government of Nunavut, Community and Government Services (GN-CGS) on behalf of the Hamlet of Kimmirut (the Application). The Application included the following documents:

- Renewal and Amendment Water Licence Application
- O&M manual of the existing Sewage discharge system
- O&M manual of the existing Waste (Land fill and Metal Dump) sites
- QA/QC Plan of the Environmental Facilities
- Spill Contingency Plan of the Environmental Facilities
- Segregation of Hazardous wastes
- The Plan for Compliance
- Annual Report 2015
- Hamlet support Letter

On November 14, 2017, the NWB contacted GN-CGS informing them that in order to proceed the application, the Hamlet of Kimmirut must submit additional information including: a Compliance Plan that addresses Sewage disposal issues, Management Plans for existing facilities, a Spill Contingency Plan and an Abandonment and Restoration Plan.

On September 4, 2018, GN-CGS submitted a Compliance Plan and a letter providing an update on the development of abandonment and restoration plans for applicable facilities. In addition, on September 13, 2018, a document entitled: Phase 1 of Regulatory Approvals for a Wastewater Treatment facility in Kimmirut, NU, completed by Stantec Consulting Ltd., was submitted by the Applicant, that provided a preliminary design and location for the proposed Enhanced Sewage Disposal Facility.

On September 25, 2018, following a preliminary internal technical review, the NWB concluded that the Application met the requirements of section 48(1) of the *Nunavut Waters and Nunavut Surface Rights Tribunal Act (NWNSRTA or Act)* and forwarded notice of the Application to regulators, council of the municipality most affected by the project and other interested parties. All parties were invited to make representations to the NWB within thirty (30) days.

On October 25, 2018, Environment and Climate Change Canada (ECCC) provided comments and on November 8, 2019, following a prior request for the extension of submission deadline Crown-Indigenous Relations and Northern Affairs Canada (CIRNAC) provided comments. Following a brief review of the information and comments provided, on November 22, 2018, the NWB requested that GC-CGS responded to interveners comments. Subsequently, the NWB was informed that GN-CGS will respond to interveners comments in the first quarter of 2019.

On March 15, 2019, the GN-CGS provided a response to interveners comments including the following information:

- Responses to the comments by CIRNAC dated November 08, 2018;
- Responses to the comments by ECCC dated October 24, 2018;
- The Revised Operation and Maintenance Procedure for the Existing Sewage Disposal System;
- The Revised Solid Waste Operation and Maintenance Plan;
- The Revised QA/QC Plan;
- The CALA certification for Caduceon Lab, expiration on August 16, 2019; and
- Milestones with the associated dates of different items/activities of the proposed Sewage Disposal Facility.

On March 20, 2019, and following an internal review of interveners comments and the subsequent information provided, the NWB requested additional information be provided by GN-CGS to fully address comments by parties.

On April 12, 2019, GN-CGS provided a response including the following information which addressed all concerns raised by parties and the NWB:

- Responses to the comments made by NWB TA dated March 20, 2019;
- The Revised Operation and Maintenance Procedure for the Existing Sewage Disposal System April, 2019;
- The Revised Solid Waste Operation and Maintenance Plan April, 2019;
- The Revised QA/QC Plan April, 2019;
- The Caduceon Lab's support letter on the QA/QC Plan April 2019; and
- The 2016 Annual Water Consumption Report.

No public concerns were expressed during the notice period. In consideration of the comments received, the NWB determined that a public hearing would not be required and proceeded with the application process. Based upon the results of the completed assessment by the NWB and intervening parties, including consideration of any potential accidents, malfunctions, or cumulative environmental effects that the overall project might have in the area, the Board has approved the application for the replacement of Water Licence No. 3BM-KIM0911 with the Water Licence No. **3BM-KIM1929**.

III. ISSUES FOR DISCUSSION

Term of the Licence

In accordance with the s. 45 of Nunavut Waters and Nunavut Surface Rights Tribunal Act (*NWNSRTA or Act*), the NWB may issue a licence for a term not exceeding twenty-five (25) years. In determining the appropriate term of a licence, the Board takes into consideration several factors including but not limited to, the Licensee's past performance, compliance record and history, ability to comply with the terms and conditions included of a potential licence, interveners' comments and recommendations. The Licensee has requested a ten (10) year term for the licence issued to the undertaking. No objections were received regarding this term

duration, therefore the Board has granted a ten (10) year term to the Applicant for the Replacement Licence. The Board believes that the term granted will provide the Licensee with adequate time to update required plans and commission future planned facilities and infrastructure.

Annual Reports

The NWB has imposed on the Licensee, the requirement to produce an Annual Report. These Reports are for the purpose of ensuring that the NWB has an accurate annual update of municipal activities related to water use and waste disposal during a calendar year. This information is maintained on the Public Registry and is available to interested parties upon request. A “*Standardized Form for Annual Reporting*” is to be used by the Licensee and is available from the NWB file transfer protocol (FTP) site under the Public Registry link at the NWB Website.

Website Public Registry:

<ftp://ftp.nwb-oen.ca/other documents/Standardized Forms/>

A number of compliance issues have been repeatedly identified by CIRNAC Inspection from recent and older years and provided within Water Licence Inspection Reports. The NWB strongly recommends that the Licensee review these reports and address issues with applicable information in subsequent Annual Reports. These issues include but are not limited to: current sewage disposal practices, Solid Waste Site management/operations, and lack of a valid Licence. Due to the history of these compliance issues, the NWB has included under Part B, Item 1(i), the requirement for the Licensee to include with their annual report, an update to their compliance plan and the activities outlined within it, including but not limited to the Sewage disposal, solid Waste management, and reclamation of old facilities.

The NWB has also taken this opportunity to review the Annual Reports submitted in recent years and concluded that these reports generally meet Licence Requirement’s, and that no reoccurring deficiencies have arisen.

Water Use

The Municipality utilizes Fundo Lake as a source for their fresh water supply, which is located approximately 1 km south-west of the Hamlet. Water is taken via an inclined shaft intake which is equipped with a submersible pump located below the water level in the lake, and distributed to the community by truck. During the review of the Application, it was brought up that the total requested volume of Water use may not be enough to sustain the Hamlet of Kimmirut for the requested 10-year Licence term given the population growth of the community. As such, water use authorization has increased from the previously approved amount of 30,000 cubic metres per year to an amount of 35,000 cubic metres per year, to account for population growth over the 10-year term of the Licence.

Currently, water use is accounted for by recording the amounts delivered by truck to municipal buildings and not by directly measuring water uptake from the source. As identified by the Inspector in a number of Water Licence Inspections Reports, the current method of accounting

for water use does not account for water used for other purposes such as dust suppression. The Licensee is reminded of Condition H, Item 3, of the Licence that requires the recording of water extracted from the source.

Deposit of Waste

Sewage

The Hamlet of Kimmirut currently, and has always, discharges its untreated wastewater approximately 500 metres south of the community, adjacent to the existing Solid Waste Disposal Facility, and directly to a ditch which runs 300 metres down a steep slope before discharging into the marine environment. This practice offers little/no treatment and has been identified by the Inspector as one of the major points of non-compliance with the Licence. As such, the Applicant has provided with their Application, a Compliance Plan that outlines plans for an Enhanced Sewage Disposal Facility, identifying a potential site and providing a preliminary design. The schedule for this new facility, as outlined in the Application is for design briefs to be submitted in 2019 and construction to start in 2020.

The Licensee provided with the Application a Plan entitled “*Operation and Maintenance Procedures for the Existing Sewage Disposal System*,” (O&M Procedures or Plan) that was reviewed by NWB staff and intervening parties, and revised April 2019. Following the review of this Plan and subsequent updates to it, the information provided was deemed suitable for the current Sewage disposal practices, however an updated Plan would have to be provided prior to the commissioning of the Enhanced Sewage Disposal Facility. Similarly, Sewage discharge criteria under Part D, Item 2, have been updated to be protective of the freshwater environment in accordance with the “*Guidelines for Discharge of Treated Municipal Wastewater in the Northwest Territories (1992)*,” and are to be met by the Enhanced Sewage Disposal Facility.

In 2001 a sewage lagoon was constructed approximately 1.5 km to the west of the community in order to provide some level of sewage treatment in an attempt to meet sewage discharge requirements. It was identified that this lagoon did not have sufficient capacity to meet the over winter storage capacity of the Hamlet and in 2012 a lower lagoon was constructed and added to this to make the Abandoned (2012) Sewage Disposal Facility. This facility was built but was never operated because it discharges into a wetland that was confirmed to house fish. The Abandoned (2012) Sewage Disposal Facility has now been permanently abandoned and as part of the submitted Compliance Plan, the Licensee has committed to developing a Abandonment and Restoration Plan for this Facility as outlined in Part G, Item 3.

The previous licence had raised concerns with sludge management at a newly constructed Sewage disposal facility. Condition F, Item 2, of this Licence requires the Licensee to include a discussion of sludge management procedures in the updated Managment Plan that is to be submitted six (6) months prior to the commissioning of the proposed Enhanced Sewage Disposal Facility.

Solid Waste

The Solid Waste Disposal Facility for Kimmirut is located approximately 500 metres south of the community, and adjacent to the current Sewage Disposal Site. Access to the site is via a gravel road. The Solid Waste Facility has three main areas:

- (i) area for general municipal waste disposal,
- (ii) area for bulky wastes, and
- (iii) area for waste oil and hazardous waste.

The general municipal waste area is fenced but the fence is not maintained, has fallen over in some areas, and does not have a gate so access by the community is not limited. Waste is generally piled and crushed within the fenced area and from time to time the Hamlet open burns suitable waste during the summer and fall periods on routine basis depending on weather.

Three main compliance issues have been identified at the current Solid Waste Disposal Facility. This first being the lack of suitable fencing to control wind-blown debris as required under Part D, Item 7, of the Licence. The second being the lack of lining and a perimeter berm to control seepage and surface runoff as required under Part D, Item 8, of the Licence. The third being, the current practice of minimal sorting and segregation for hazardous wastes as required under Part D, Item 9, of the Licence. The Licensee has indicated that they are planning to store hazardous wastes in a sea can for future disposal in the south, and repair fencing at the facility. In addition, the facility should be bermed in accordance with Part D, Item 8. The Licensee is again reminded that they are to adhere to these Licence conditions in order to maintain compliance.

The Licensee provided with the Application a Plan entitled “*Solid Waste Operation and Maintenance Plan*,” (O&M Plan) that was reviewed by NWB staff and intervening parties, and revised April 2019. This O&M Plan is to assist Hamlet staff in the proper operation and maintenance of the Solid Waste Disposal Facility. Following the review of this Plan and subsequent updates to it, the information provided was deemed suitable for the current Solid Waste Disposal Facility. The Board has approved this Plan under Part F, Item 4, of the Licence, however, an updated Plan will have to be provided prior to the commissioning of the proposed Enhanced Solid Waste Disposal Facility.

In 2001, an alternative disposal site (referred now as the Abandoned (2001) Solid Waste Facility) was identified and partially developed, approximately 1.5 km to the west of the community, in order to replace the currently used Solid Waste Facility that is poorly maintained and in need of replacement. The Abandoned (2001) Solid Waste Facility is adjacent to the Abandoned (2012) Sewage Disposal Facility, and was abandoned for similar reasons, i.e. because it discharges into a wetland that was confirmed to house fish. The Abandoned (2001) Solid Waste Facility has now been permanently abandoned and as part of the submitted Compliance Plan, the Licensee has committed to developing a Abandonment and Restoration Plan for this Facility as outlined in Part G, Item 3.

The City has included as part of the Application, a Compliance Plan that outlined a schedule for the development of a new Enhanced Solid Waste Disposal Facility, with a feasibility study expected in 2019 and the start of construction and commissioning in 2021.

Operations and Management Plans

As part of the Licence renewal Process, the Applicant was required to provide a Compliance Plan addressing reoccurring compliance issues specifically to do with the methods for Sewage disposal and the solid Waste disposal. In the Compliance Plan provided, the Applicant committed to providing the Design of the Enhanced Sewage Disposal Facility in 2019 and starting construction in 2020; and providing the design of the Enhanced Solid Waste Facility in 2019 and starting construction in 2021.

In order to ensure that the Licensee is prepared for the new facilities, the Licence includes under Part F, the requirement to provide updated Operations and Maintenance Plans for the Enhanced Sewage Disposal Facility and the Enhanced Solid Waste Disposal Facility, six (6) months prior to their utilization.

In order to ensure all decommissioned facilities are properly reclaimed, the Licence includes under Part G, the requirement to provide Abandonment and Restoration Plans six (6) months prior to the abandonment of facilities currently in use, including the Sewage Disposal Site and the Solid Waste Disposal Facility. The Licence also includes under Part G, the requirement to provide Abandonment and Restoration Plans in a timeline following their Compliance Plan submitted with the Application, for the Abandoned (2012) Sewage Disposal Facility and the Abandoned (2001) Solid Waste Disposal Facility.

Abandonment and Restoration

To ensure that all existing end-of-life facilities are reclaimed in an appropriate manner, the NWB requires the Licensees to submit an Abandonment and Restoration Plan at least six (6) months prior to final closure of any existing facility or upon the planned construction of new facilities to replace existing ones. The requirements for the Plan are outlined in Part G, Item 1, of this Licence.

Specifically, the Board has included in Part G, Item 1, the requirement to provide Abandonment and Restoration Plans for the Sewage Disposal Site and Solid Waste Disposal Facility currently in use, and as recommended by ECCC in their October 24, 2018 submission¹, the Board has included in Part G, Item 2, to provide Abandonment and Restoration Plans for the Abandoned (2012) Sewage Disposal Facility and the Abandoned (2001) Solid Waste Disposal Facility.

Monitoring Program

Monitoring stations for the raw water supply, the Effluent discharged from Sewage Disposal Site, and runoff from the Solid Waste Disposal Facility have been carried forward into this Licence

¹ ECCC Technical comments on Water Licence Application for renewal of Water Licence 3BM-KIM0911.

from the previous Licence. It should also be noted that while minimum sampling requirements have been imposed, additional sampling may be requested by an Inspector.

The Quality Assurance / Quality Control (QA/QC) Plan provides the necessary checks and controls under the Licence for sampling, monitoring and reporting for Hamlet of Kimmirut. The purpose of the QA/QC Plan is to ensure that samples taken in the field as part of the Monitoring Program will maintain a high quality, so as to accurately represent the physical and chemical nature of the samples being taken. These procedures are generally developed from literature and guidelines and are intended to promote good practices in environmental management.

The “*Hamlet of Kimmirut Quality Assurance / Quality Control Plan*” included with the Application was reviewed and updated during the technical review of the Application, and approved by an analyst on April 1, 2019.

The NWB has included a requirement under Part H, Item 11, to annually review the QA/QC Plan and modify it as necessary. Revised QA/QC Plans shall be submitted to the Board with a current approval letter from an accredited lab and shall meet the requirements set out in Part H, Items 10 and 11.



NUNAVUT WATER BOARD REPLACEMENT WATER LICENCE

Licence No. 3BM-KIM1929

Pursuant to the *Nunavut Waters and Nunavut Surface Rights Tribunal Act* and the *Agreement Between the Inuit of the Nunavut Settlement Area and Her Majesty the Queen in right of Canada*, the Nunavut Water Board, hereinafter referred to as the Board, hereby grants to

HAMLET OF KIMMIRUT

(Licensee)

P.O. BOX 120, KIMMIRUT, NUNAVUT, X0A 0N0

(Mailing Address)

hereinafter called the Licensee, the right to alter, divert or otherwise use water or dispose of waste for a period subject to restrictions and conditions contained within this Licence renewal:

Licence Number/Type:	<u>3BM-KIM1929 TYPE "B"</u>
Water Management Area:	<u>HUDSON STRAIT WATERSHED (65)</u>
Location:	<u>KIMMIRUT, QIKIQTANI REGION, NUNAVUT</u>
Classification:	<u>MUNICIPAL UNDERTAKING</u>
Purpose:	<u>DIRECT WATER USE AND DEPOSIT OF WASTE</u>
Quantity of Water use not to Exceed:	<u>ANNUAL LIMIT OF 35,000 CUBIC METRES and DAILY LIMIT OF 299 CUBIC METRES</u>
Date of Licence Issuance:	<u>MAY 27, 2019</u>
Expiry of Licence:	<u>MAY 26, 2029</u>

This Licence renewal issued and recorded at Gjoa Haven, Nunavut includes and is subject to the annexed conditions.

**Lootie Toomasie,
Nunavut Water Board, Chair**

PART A: SCOPE, DEFINITIONS AND ENFORCEMENT

1. Scope

This Licence allows for the use of water and the deposit of waste for a Municipal undertaking classified as per Schedule 1 of the *Regulations* at the Hamlet of Kimmirut in Qikiqtani Region, Nunavut (Latitude 68° 50' N and Longitude 95° 52' W).

- a. This Licence is issued subject to the conditions contained herein with respect to the taking of water and the depositing of waste of any type in any waters or in any place under any conditions where such waste or any other waste that results from the deposits of such waste may enter any waters. Whenever new *Regulations* are made or existing *Regulations* are amended by the Governor in Council under the *Nunavut Waters and Nunavut Surface Rights Tribunal Act*, or other statutes imposing more stringent conditions relating to the quantity or type of waste that may be so deposited or under which any such waste may be so deposited, this Licence shall be deemed, upon promulgation of such *Regulations*, to be subject to such requirements; and
- b. Compliance with the terms and conditions of this Licence does not absolve the Licensee from responsibility for compliance with the requirements of all applicable Federal, Territorial and Municipal legislation.

2. Definitions

“Act” means the *Nunavut Waters and Nunavut Surface Rights Tribunal Act*;

“Addendum” means the supplemental text that is added to a full plan or report usually included at the end of the document and is not intended to require a full resubmission of the revised report.

“Amendment” means a change to original terms and conditions of this Licence requiring correction, addition or deletion of specific terms and conditions of the Licence; modifications inconsistent with the terms of the set terms and conditions of the Licence;

“Average Concentration” means the arithmetic mean of the last four consecutive analytical results for composite or grab samples collected from the monitoring stations identified in Part H;

“Appurtenant Undertaking” means an undertaking in relation to which a use of water or a deposit of waste is permitted by a licence issued by the Board;

“Board” means the Nunavut Water Board established under the *Agreement Between the Inuit of the Nunavut Settlement Area and Her Majesty the Queen in right of Canada* and the *Nunavut Waters and Nunavut Surface Rights Tribunal Act*;

“Chief Administrative Officer” means the Executive Director of the Nunavut Water

Board;

“**Compliance Plan**” means the plan developed by the Hamlet of Kimmirut to meet Licence requirements specifically, but not limited to, the disposal of Sewage and solid Waste, as provided in the Application for Water Licence Amendment filed by the Applicant;

“**Effluent**” means treated or untreated liquid waste material that is discharged into the environment from a structure such as a settling pond, landfarm or a treatment plant;

“**Engineer**” means a professional engineer registered to practice in Nunavut in accordance with the *Consolidation of Engineers and Geoscientists Act S. Nu 2008, c.2* and the *Engineering and Geoscience Professions Act S.N.W.T. 2006, c.16 Amended by S.N.W.T. 2009, c.12*;

“**Final Discharge Point**” means an identifiable discharge point of a Waste Disposal Facility beyond which the Licensee no longer exercises care and control over the quality of the Effluent;

“**Freeboard**” means the vertical distance between water line and crest on a dam or dyke's upstream slope;

“**Geotechnical Engineer**” means a professional engineer registered with the Association of Professional Engineers, Geologist and Geophysicists of Nunavut and whose principal field of specialization with the engineering properties of earth materials in dealing with man-made structures and earthworks that will be built on a site. These can include shallow and deep foundations, retaining walls, dams, and embankments;

“**Grab Sample**” means an undiluted quantity of material collected at a particular time and place that may be representative of the total substance being sampled at the time and place it was collected;

“**Greywater**” means all liquid wastes from showers, baths, sinks, kitchens and domestic washing facilities, but does not include toilet wastes;

“**High Water Mark**” means the usual or average level to which a body of water rises at its highest point and remains for sufficient time so as to change the characteristics of the land (ref. Department of Fisheries and Oceans Canada, Operational Statement: Mineral Exploration Activities);

“**Inspector**” means an Inspector designated by the Minister under Section 85 (1) of the *Act*;

“**Licensee**” means the holder of this Licence;

“Maximum Average Concentration” means the average concentration of any four consecutively collected samples taken from the identical sampling location and taken during any given timeframe.

“Modification” means an alteration to a physical work that introduces a new structure or eliminates an existing structure and does not alter the purpose or function of the work, but does not include an expansion;

“Monitoring Program” means a monitoring program established to collect data on surface water and groundwater quality to assess impacts to the freshwater aquatic environment of an appurtenant undertaking;

“Nunavut Agreement” means the *“Agreement Between the Inuit of the Nunavut Settlement Area and Her Majesty the Queen in right of Canada”*, including its preamble and schedules, and any amendments to that agreement made pursuant to it;

“Regulations” means the *Nunavut Waters Regulations* SOR/2013-69 18th April, 2013;

“Sewage” means all toilet wastes and greywater;

“Sewage Disposal Facility, Abandoned (2012)” comprises the area and engineered Lagoon and decant structures designed to contain and treat sewage, constructed in 2001 and updated in 2012 but never used, as described in the Application for Water Licence renewal filed by the Applicant;

“Sewage Disposal Facility, Enhanced” comprises an area and engineered Lagoon and decant structures designed to contain and treat sewage, that is planned for construction during this Licence term, as described in the Application for Water Licence renewal and Amendment filed by the Applicant;

“Sewage Disposal Site” comprises the location currently used to discharge sewage as described in the Application for Water Licence renewal filed by the Applicant;

“Solid Waste Disposal Facility” comprises the area and associated structures currently in use and designed to contain solid waste as described in the Application for Water Licence renewal filed by the Applicant;

“Solid Waste Disposal Facility, Abandoned (2001)” comprises the area and structures designed to contain solid waste and, constructed in 2001 but never used, as described in the Application for Water Licence renewal filed by the Applicant;

“Solid Waste Disposal Facility, Enhanced” comprises the area and associated engineered structures designed to contain solid waste, that is planned for construction during this Licence term, as described in the Application for Water Licence renewal filed by the Applicant;

“Spill Contingency Plan” means a Plan developed to deal with unforeseen petroleum and hazardous materials events that may occur during the operations conducted under the Licence;

“Toilet Wastes” means all human excreta and associated products, but does not include greywater;

“Waste” means, as defined in S.4 of the *Act*, any substance that, by itself or in combination with other substances found in water, would have the effect of altering the quality of any water to which the substance is added to an extent that is detrimental to its use by people or by any animal, fish or plant, or any water that would have that effect because of the quantity or concentration of the substances contained in it or because it has been treated or changed, by heat or other means;

“Waste Disposal Facilities” means all facilities designated for the disposal of waste, and includes the Sewage Disposal Facilities and Solid Waste Disposal Facilities (including Hazardous Waste);

“Water” or “Waters” means waters as defined in section 4 of the *Act*; and

“Water Supply Facilities” comprises the area and associated intake infrastructure at Fundo Lake, as described in the Application for Water Licence filed by the Applicant.

3. Enforcement

- a. Failure to comply with this Licence will be a violation of the *Act*, subjecting the Licensee to the enforcement measures and the penalties provided for in the *Act*;
- b. All inspection and enforcement services regarding this Licence will be provided by Inspectors appointed under the *Act*; and
- c. For the purpose of enforcing this Licence and with respect to the use of water and deposit or discharge of waste by the Licensee, Inspectors appointed under the *Act*, hold all powers, privileges and protections that are conferred upon them by the *Act* or by other applicable law.

PART B: GENERAL CONDITIONS

1. The Licensee shall file an Annual Report on the Appurtenant Undertaking with the Board no later than March 31st of the year following the calendar year being reported, containing the following information:
 - a. tabular summaries of all data generated under the “Monitoring Program”;
 - b. summary of modifications to the “Monitoring Program” in accordance with Part H, Item 13;

- c. the daily, monthly and annual quantities in cubic metres of freshwater obtained from all sources;
 - d. the daily, monthly and annual quantities in cubic metres of each and all Waste discharged; including the hazardous and non-hazardous Waste accepted at the Solid Waste Facilities;
 - e. a summary of modifications and/or major maintenance work carried out on the Water Supply and Waste Disposal Facilities, including all associated structures and facilities;
 - f. a list of unauthorized discharges and summary of follow-up action taken;
 - g. a summary of any abandonment and restoration work completed during the year and an outline of any work anticipated for the next year;
 - h. a summary of any studies, reports and plans (e.g., Operation and Maintenance, Abandonment and Restoration, QA/QC) requested by the Board that relate to waste disposal, water use or reclamation, and a brief description of any future studies planned;
 - i. An update on the Compliance Plan and progress made on specific requirements therein; and
 - j. any other details on water use or waste disposal requested by the Board by November 1st of the year being reported.
2. The Licensee shall notify the NWB of any changes in operating plans or conditions associated with this project at least thirty (30) days prior to any such change.
 3. The Licensee shall comply with the “Monitoring Program” described in this Licence, and any amendments to the “Monitoring Program” as may be made from time to time, pursuant to the conditions of this Licence.
 4. The “Monitoring Program” and compliance dates specified in the Licence may be modified at the discretion of the Board.
 5. The Licensee shall install flow meters or other such devices, or implement suitable methods required for the measuring of water volumes as required under Part H.
 6. The Licensee shall, post the necessary signs, where possible, to identify the stations of the “Monitoring Program”. All signage postings shall be in the Official Languages of Nunavut, and shall be located and maintained to the satisfaction of an Inspector.
 7. The Licensee shall immediately report to the 24-Hour Spill Report Line at (867) 920-8130, any spills of Waste, which are reported to, or observed by the Licensee, within the municipal boundaries or in the areas of the Water Supply or Waste Disposal Facilities.
 8. The Licensee shall, for all Plans submitted under this Licence, include a proposed timetable for implementation. Plans submitted, cannot be undertaken without subsequent written Board approval and/or direction. The Board may alter or modify a Plan if necessary to achieve the legislative objectives and will notify the Licensee in writing of acceptance, rejection or alteration of the Plan.

9. The Licensee shall, for all Plans submitted under this Licence, implement the Plan as approved by the Board in writing.
10. The Licensee shall review the Plans referred to in this Licence, as required by changes in operation and/or technology, and modify the Plan accordingly. Revisions to the Plans shall be submitted in the form of an Addendum to be included with the Annual Report.
11. Every Plan to be carried out pursuant to the terms and conditions of this Licence shall become a part of this Licence, and any additional terms and conditions imposed upon approval of a Plan by the Board become part of this Licence. All terms and conditions of the Licence should be contemplated in the development of a Plan where appropriate.
12. The Licensee shall ensure a copy of this Licence is maintained at the site of operations at all times. Any communication with respect to this Licence shall be made in writing to the attention of:
 - (a) **Manager of Licensing:**
Nunavut Water Board
P.O. Box 119
Gjoa Haven, NU X0B 1J0
Telephone: (867) 360-6338
Fax: (867) 360-6369
Email: licensing@nwb-oen.ca
 - (b) **Inspector Contact:**
Water Resources Officer
Crown-Indigenous Relations and Northern Affairs Canada,
Nunavut District, Nunavut Region
P.O. Box 100
Iqaluit, NU X0A 0H0
Telephone: (867) 975-4295
Fax: (867) 979-6445
13. The Licensee shall submit an electronic copy of all reports, studies, and plans to the Board. Reports or studies submitted to the Board by the Licensee shall include a detailed executive summary in Inuktitut.
14. The Licensee shall ensure that any document(s) or correspondence submitted by the Licensee to the NWB is received and acknowledged by the Manager of Licensing.
15. This Licence is assignable as provided for in Section 44 of the *Act*.
16. The expiry or cancellation of this Licence does not relieve the Licensee from any obligation imposed by the Licence, or any other regulatory requirement.

PART C: CONDITIONS APPLYING TO WATER USE

1. The Licensee shall obtain all freshwater processed by the Water Supply Facilities and/or used for municipal purposes from Fundo Lake or as otherwise approved by the Board in writing.
2. The annual quantity of Water use for all purposes under this Licence shall not exceed thirty-five thousand (35,000) cubic metres per year and two hundred ninety-nine (299) cubic metres per day.
3. The Licensee shall maintain the Water Supply Facilities to the satisfaction of the Inspector.
4. The Licensee shall equip all water intake hoses with a screen of appropriate mesh size to ensure that fish are not entrained and shall withdraw Water at a rate such that fish do not become impinged on the screen.
5. The Licensee shall not remove any material from below the ordinary High Water Mark of any water body unless approved by the Board in writing.
6. The Licensee shall not cause erosion to the banks of any water body and shall provide necessary controls to prevent such erosion.
7. Sediment and erosion control measures shall be implemented prior to and maintained as required during Hamlet operations, to prevent entry of sediment into Water.

PART D: CONDITIONS APPLYING TO WASTE DISPOSAL

1. Prior to commissioning the Enhanced Sewage Disposal Site, the Licensee shall direct all Sewage to the Sewage Disposal Site. The Licensee shall direct all Sewage to the Enhanced Sewage Disposal Facility once it has been commissioned, or as otherwise approved by the Board.
2. All Effluent discharged from the Sewage Disposal Site at Monitoring Program Station KIM-3 and the Enhanced Sewage Disposal Facility at Monitoring Program Station KIM-5 shall not exceed the following Effluent quality limits:

Parameter	Maximum Concentration of any Grab
Faecal Coliforms	1×10^4 CFU/100mL
BOD ₅	80 mg/L
Total Suspended Solids	100 mg/L
Oil and grease	No visible sheen
PH	Between 6 and 9

3. A Freeboard limit of at least 1.0 metre, or as recommended by a qualified Geotechnical Engineer and as approved by the Board in writing, shall be maintained at all dams, dykes, or structures intended to contain, withhold, divert or retain water or wastes.
4. The Licensee shall provide at least ten (10) days notification to an Inspector, prior to initiating any decant of the Enhanced Sewage Disposal Facility.
5. The Enhanced Sewage Disposal Facility shall be maintained and operated, in such a manner as to prevent structural failure.
6. The Licensee shall dispose of and permanently contain all solid Wastes at the Solid Waste Disposal Facility, or at the Enhanced Solid Waste Disposal Facility once constructed, or as otherwise approved by the Board in writing.
7. The Licensee shall implement measures to control wind-blown litter at the Solid Waste Disposal Facility and Enhanced Solid Waste Disposal Facility once constructed.
8. The Licensee shall berm the Solid Waste Disposal Facility and implement other measures to prevent hazardous materials and/or leachate from entering water.
9. The Licensee shall segregate and store all hazardous materials and/or hazardous waste, including waste oil, within the Solid Waste Disposal Facility in a manner as to prevent the deposit of deleterious substances into any water until such a time as proper disposal arrangements are made.
10. The Licensee shall implement measures to control wind-blown litter at the Solid Waste Disposal Facility.
11. Licensee shall submit, within 30 days after the discharge point is identified and at least 60 days prior to discharging Effluent, the following information for any new Final Discharge Points or changes made to existing Final Discharge Points during the term of the licence:
 - a. Plans, specifications and a general description of each Final Discharge Point together with its specific geo-referenced location;
 - b. A description of how the additional Final Discharge Point is designed and maintained.

PART E: CONDITIONS APPLYING TO MODIFICATION AND CONSTRUCTION

1. The Licensee shall submit to the Board for approval, for construction drawings stamped and signed by a qualified engineer registered in Nunavut, sixty (60) days prior to the construction of any dams, dykes or structures intended to contain, withhold, divert or retain water or wastes.
2. The Licensee may, without written consent from the Board, carry out Modifications to the

Water Supply Facilities and Waste Disposal Facilities provided that such Modifications are consistent with the terms of this Licence and the following requirements are met:

- a. the Licensee has notified the Board in writing of such proposed Modifications at least sixty (60) days prior to beginning the Modifications;
 - b. such Modifications do not place the Licensee in contravention of the Licence or the *Act*;
 - c. such Modifications are consistent with the NIRB Screening Decision;
 - d. the Board has not, during the sixty (60) days following notification of the proposed Modifications, informed the Licensee that review of the proposal will require more than sixty (60) days; and
 - e. the Board has not rejected the proposed Modifications.
3. The Modifications for which all of the conditions referred to in Part E, Item 2, have not been met, may only be carried out upon written approval from the Board.
 4. The Licensee shall, within ninety (90) days of completion of Modification or Construction of facilities and/or infrastructure associated with the project, submit to the Board a Construction Summary Report along with stamped as-built plans and drawings, providing explanation to reflect any deviations from for construction drawings taking into account construction and field decisions and how they may affect the performance of engineered facilities.
 5. All activities shall be conducted in such a way as to minimize impacts on surface drainage and the Licensee shall immediately undertake any corrective measures in the event of any impacts on surface drainage.
 6. The Licensee shall implement and maintain erosion control measures during activities carried out under this Part, to prevent impacts to water resulting from the release of sediment and minimize erosion.
 7. With respect to earthworks, the deposition of debris or sediment into or onto any water body is prohibited. These materials shall be disposed a distance of at least thirty-one (31) metres from the ordinary High Water Mark in such a fashion that they do not enter the water.
 8. The construction or disturbance of any stream/lake bed or banks of any definable water course are not permitted, unless authorized by the Board in writing.
 9. The Licensee shall use fill material for construction, operation and maintenance only from approved sources that have been demonstrated, by appropriate geochemical analyses, to not produce acid rock drainage and to be non-metal leaching, and free of contaminants.
 10. The Licensee shall submit to the Board for approval, sixty (60) days prior to the initiation of any quarrying activities, a quarry management plan that includes the following:

- a. Confirmation that the quarry material does not produce acid rock drainage and is non-metal leaching;
- b. An assessment of any potential impacts to freshwater quality; and
- c. Mitigation measures.

PART F: CONDITIONS APPLYING TO OPERATION AND MAINTENANCE

1. The Licensee shall implement the Compliance Plan and timelines outlined therein, for the construction and commissioning of the Enhanced Solid Waste Disposal Facility and Enhanced Sewage Disposal Facility.
2. The Board has approved the Plan entitled “*Operation and Maintenance Procedure for the Existing Sewage Disposal System*” dated April, 2019, that was submitted with the Application.
3. The Licensee shall submit to the Board for approval, ninety (90) days prior to commissioning of the Enhanced Sewage Disposal Facility, a revision to the Plan referred to in Part F Item 2, that reflects operation and maintenance procedures at the Enhanced Sewage Disposal Facility, including but not limited to
 - a. sludge management procedures;
 - b. lagoon decanting procedures.
4. The Board has approved the Plan entitled “*Solid Waste Operation and Maintenance Plan*” dated April, 2019, that was submitted with the Application.
5. The Licensee shall submit to the Board for approval, ninety (90) days prior to commissioning of the Enhanced Solid Waste Disposal Facility, a revision to the Plan referred to in Part F Item 4, that reflects operation and maintenance procedures for the Enhanced Solid Waste Disposal Facility, including but not limited to:
 - a. Waste segregation;
 - b. Hazardous Waste management;
 - c. Wastes incineration;
 - d. Runoff management.
6. The Licensee shall review the Plans referred to in Part F as required by changes in operation and/or technology and modify accordingly. Revisions are to be submitted in the form of an Addendum to be included with the Annual Report.
7. An inspection of all engineered facilities related to the management of water and waste shall be carried out by an Engineer (Civil, Municipal or Geotechnical) annually and before commissioning any facility. The Engineer’s report shall be submitted to the Board within sixty (60) days of the inspection, including a Cover Letter from the Licensee outlining an implementation plan addressing each of the Engineer’s recommendations.

8. The Licensee shall perform more frequent inspections of the engineered facilities at the request of an Inspector.
9. If, during the period of this Licence, an unauthorized discharge of Waste occurs, or if such a discharge is foreseeable, the Licensee shall:
 - a. employ the appropriate Spill Contingency Plan as provided in the Operation and Maintenance Plan. Take whatever steps are immediately practicable to protect human life, health and the environment;
 - b. report the incident immediately via the 24-Hour Spill Reporting Line at (867) 920-8130 and to the CIRNAC Manager of Field Operations at (867) 975-4295; and
 - c. submit to the Inspector, a detailed report on each occurrence, not later than thirty (30) days after initially reporting the event, that provides the necessary information on the location (including the GPS coordinates), initial response action, remediation/clean-up, status of response (ongoing, complete), proposed disposal options for dealing with contaminated materials and any preventative measures to be implemented.

PART G: CONDITIONS APPLYING TO ABANDONMENT AND RESTORATION

1. The Licensee shall submit to the Board for approval, an Abandonment and Restoration Plan at least six (6) months prior to abandoning any facilities or the construction of new facilities to replace existing ones. Where applicable, the Plan shall include information on the following:
 - a. water intake facilities;
 - b. the water treatment and waste disposal sites and facilities;
 - c. abandoned water and waste facilities;
 - d. petroleum and chemical storage areas;
 - e. any site affected by waste spills;
 - f. leachate prevention;
 - g. an implementation schedule;
 - h. maps delineating all disturbed areas, and site facilities;
 - i. consideration of altered drainage patterns;
 - j. type and source of cover materials;
 - k. future area use;
 - l. hazardous wastes; and
 - m. a proposal identifying measures by which restoration costs will be financed by the Licensee upon abandonment.
2. If the Plan referred to in Part G, Item 1 is not approved the Licensee shall make the necessary revisions and resubmit the Plan within thirty (30) days following notification from the Board.

3. The Licensee shall provide to the Board for approval, six (6) months prior to the initiation of reclamation, Abandonment and Restoration Plans for the following facilities, in accordance with the timelines outlined in the Application, and as described in Part G, Item 1:
 - a. the Abandoned (2012) Sewage Disposal Site;
 - b. the Abandoned (2001) Solid Waste Facility.
4. The Licensee shall complete all restoration work within the time schedule specified in the Plan, or as subsequently revised and approved by the Board.
5. Areas that have been contaminated by hydrocarbons shall be reclaimed to meet objectives as outlined in the *Government of Nunavut's Environmental Guideline for Site Remediation*, January 2002. The use of reclaimed soils for the purpose of back fill or general site grading may be carried out only upon consultation and approval by the Government of Nunavut, Department of Environment and an Inspector.

PART H: CONDITIONS APPLYING TO THE MONITORING PROGRAM

1. The Licensee shall maintain Monitoring Program Stations at the following locations:

Monitoring Program Station Number	Description	Parameters / Frequency	Status
KIM-1	Raw water supply intake at Fundo Lake	<u>Volume</u> - Monthly	Active
KIM-2	Runoff from existing Solid Waste Disposal Facility	<u>Water Quality</u> - Three (3) times annually - Once at the beginning, middle, and near the end of the season when flow is observed	Active
KIM-3	Effluent discharge from existing Sewage Disposal Site	<u>Volume</u> - Monthly <u>Water Quality</u> - Monthly during discharge	Active
KIM-4	Effluent discharge from Enhanced Solid Waste Disposal Facility	<u>Volume</u> - Monthly and/or volume discharged <u>Water Quality</u> - Monthly and/or prior to discharge	Active once facility in use
KIM-5	Effluent discharge from Enhanced Sewage Disposal Facility	<u>Volume</u> - Monthly and/or volume discharged <u>Water Quality</u> - Monthly and/or prior to discharge	Active once facility in use

2. The Licensee shall confirm the locations and GPS coordinates for all monitoring stations referred to in Part H Item 1 with an Inspector.

3. The Licensee shall measure and record, in cubic metres, the daily, monthly and annual quantities of water extracted for all purposes at Monitoring Program Station KIM-1.
4. The Licensee shall sample at Monitoring Program Stations KIM-2, KIM-3, KIM-4, and KIM-5, according to the frequency provided in Part H, Item 1. Sample shall be analyzed for the following parameters:

Biochemical Oxygen Demand - BOD	Faecal Coliforms
pH	Conductivity
Total Suspended Solids	Oil and Grease (visual)
Nitrate-Nitrite	Ammonia Nitrogen
Chloride	Sulphate
Sodium	Potassium
Magnesium	Calcium
Total Hardness	Total Alkalinity
Total Phenols	Total Manganese
Total Arsenic	Total Aluminum
Total Cadmium	Total Cobalt
Total Copper	Total Chromium
Total Iron	Total Lead
Total Mercury	Total Nickel
Total Zinc	Total Organic Carbon - TOC
Total Petroleum Hydrocarbons	

5. The Licensee shall measure and record in cubic meters, the monthly and annual quantities of Effluent pumped or discharged from Monitoring Program Stations KIM-3, KIM-4, KIM-5.
6. The Licensee shall sample and analyse sludge in accordance with the approved Operations and Maintenance Manual referred to in Part F Item 3.
7. The Licensee shall measure and record the annual quantities of sludge removed from the Enhanced Sewage Disposal Facility along with the methods of treatment, storage, and disposal provided with the approved Operations and Maintenance Manual referred to in Part F Item 3.
8. Additional sampling and analysis may be requested by an Inspector.
9. All sampling, sample preservation and analyses shall be conducted in accordance with methods prescribed in the current edition of *Standard Methods for the Examination of Water and Wastewater*, or by such other methods approved by the Board in writing.
10. All analyses shall be performed in a laboratory accredited according to ISO/IEC Standard 17025. The accreditation shall be current and in good standing.

11. The Licensee shall implement the Plan entitled “*Hamlet of Kimmirut Quality Assurance and Quality Control Plan*” dated April 2019, that was submitted as additional information with the Application.
12. The Licensee shall annually review the QA/QC Plan and modify it as necessary. Revised QA/QC Plans shall be submitted to the Board with a current approval letter from an accredited laboratory and shall meet the standards set out in Part H, Item 9 and Part H, Item 10 of the Licence.
13. The Licensee shall include all of the data and information required by the Monitoring Program in the Licensee's Annual Report, as required per Part B, Item 1 or as otherwise requested by an Inspector.
14. Modifications to the Monitoring Program including the Monitoring Program Stations and parameters may be made only upon written approval from the Board.